DOCUMENT RESUME

ED 145 537 EA 010 002

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TITLE Evaluation of Year-Round Schools. Cherry Creek District 5. Educational Report.
INSTITUTION Colorado Univ., Boulder. Bureau of Educational Field Services.
PUB DATE 75
NOTE 76p.; For a related document, see EA 010 003

EDRS PRICE MF-$0.83 HC-$4.67 Plus Postage.
DESCRIPTORS *Academic Achievement; Elementary Education; *Parent Attitudes; *Program Costs; Program Descriptions; *Program Evaluation; Tables (Data); Team Teaching; *Year Round Schools
IDENTIFIERS *45 15 Plan; *Cherry Creek Schools CO

ABSTRACT

In designing the evaluation of year round schools (YRS) in Cherry Creek, four questions dealing with major concerns in determining the effectiveness of YRS were posed: What are the characteristics of school programs associated with YRS? What is the reaction of parents to the YRS, its inconveniences and conveniences? What are the effects of YRS on student achievement? What are the costs of YRS compared to the costs of alternative scheduling systems? These four questions serve as a framework for organizing the evaluation report. Among the findings are that roughly two-thirds of the parents prefer the YRS to the traditional schedule; when pupils in YRS are matched on intelligence quotient and sex with pupils in traditional schools in the district and achievement test scores are compared, no important differences between YRS and traditional school pupils are observed at grades 3-6 in vocabulary, language skills, work study skills, or arithmetic; YRS and traditional schools have essentially equal operating costs; and converting traditional schools to YRS is cheaper than building new schools or adding to existing buildings. (Author/IRT)

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SCHOOL OF EDUCATION
UNIVERSITY OF COLORADO
BOULDER, COLORADO

EVALUATION OF YEAR-ROUND SCHOOLS
CHERRY CREEK DISTRICT 5

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1975

Introduction

In designing the evaluation of Year Round Schools (YRS) in Cherry Creek District 5, four questions were posed dealing with major concerns in determining the effectiveness of YRS:

I. What are the characteristics of school programs associated with YRS?

II. What is the reaction of parents to the YRS, its inconveniences and conveniences?

III. What are the effects of YRS on student achievements?

IV. What are the costs of YRS compared to the costs of alternative scheduling systems?

These four questions served as a framework for organizing the evaluation reported herein.

I. What are the characteristics of school programs associated with Year-Round Schools?

The effects of the year-round schedule on a school cannot be separated from the effects of any other aspect of the school's program. Special features of schools (e.g., curriculum, staffing organization, quality of teachers) may interact with the year-round schedule and enhance or detract from its effectiveness. Therefore it is important for an evaluation to include a description of as many of the characteristics of the schools as time, space, and relevance will permit. The program description may catch subtle and unmeasurable features of the program not usually caught by tests and questionnaires.

This description of the YRS program in District #5 is based on a study of documents -- records, reports, and minutes of meetings. Interviews were conducted with the principals and a group of teachers from each of the three schools on YRS.

Background

Cherry Creek school District #5 is located in metropolitan Denver, Colorado. The population served by District Number 5 is predominantly middle and upper-middle class, white, and affluent. The district has a reputation for innovative educational programs and well-qualified staff. Three elementary schools -- Cunningham, Eastridge, and Mission Viejo -- have been on YRS for 3, 2, and 1 years, respectively. The YRS strategy used is the 45-15 plan, in which students are divided (usually according to geography) into 4 tracks. Students go to school (are "on-tract") for 45 days followed by a 15 day vacation. Twenty-five percent of the total school enrollment are on vacation

("off-track") at any one time. Besides these three schools the district has ten elementary schools, two middle schools and two high schools on traditional schedules. Poulton Elementary School was on YRS for one year before reverting to the traditional calendar.

The purpose of the conversion to YRS was to increase the capacity of existing facilities to accommodate rapid growth in enrollment without impairing the quality of the educational programs. In 1973, the Board of Education appointed a committee of administrators, teachers, parents, and students to study alternative extended school year plans and the feasibility of converting some or all district elementary schools to YRS or discontinuing YRS altogether.

Based on this feasibility study the Board adopted a stringent set of conditions for expansion of YRS in the district. For an elementary school to change to YRS, strong support must be expressed by the Board as well as the community and staff of that school. The school must have reached its enrollment capacity with YRS likely to improve utilization of facilities, equipment, and personnel. The schedule must not conflict with family vacations. The YRS must be compatible with school programs and enhance the individualization of educational offerings. Once these conditions are satisfied, further study must be made of my proposed boundary changes and construction projects in the district. A public information campaign must precede a polling of affected families. Fifty-six percent of affected households in the attendance area must respond favorably for the school to adopt YRS. When a school adopts YRS, the district provides transportation to traditional schools for children whose parents are opposed to YRS.

An additional product of the study committee was a proposal to the Colorado Department of Education for Title III funds to support the YRS program with an information dissemination center plus assistance in evaluation and cost analysis.

This project was funded and a committee set up to monitor YRS activities.

School Programs and Organizations

According to district policy each elementary school principal has considerable autonomy in determining the program and organization of his school. Beyond the common goals for the district, there is no centrally prescribed curriculum or staffing pattern. However, district policies stress individualized instruction. Furthermore, the district is known for its innovations. Several schools have open-space classes and differentiated staffing patterns. These characteristics predated the transition of the three schools to YRS.

The principals at the three schools have used their autonomy to implement programs and staffing patterns which differ from each other. Both self-contained and open space classes are used at Cunningham where teachers are divided into teams. Each Cunningham team determines the curriculum for its students. Eastridge and Mission Viejo are arranged into teaching teams and are entirely open space schools. The principal at Mission Viejo has delegated program responsibility to the teams which in turn depend on teachers to determine educational programs, materials and evaluations of students assigned to them. Eastridge teams use common school objectives, learning programs, and evaluation forms. Decisions about curriculum, record-keeping procedures, responsibility for student progress, communication with parents, scheduling of staff and students are made at the school level. These matters are enormously complex.

A committee chaired by Mr. Jim Brickey, Eastridge teacher, studied programs and organizational patterns at the three schools. The report of the committee, written by Mr. Brickey, provides a thorough description. Since this report could not be improved upon, it is included here verbatim.

Cunningham Self-Contained Classrooms

Part I:

The individual classrooms at Cunningham Elementary School are organized into two teams -- primary and intermediate -- for the purpose of budgeting, curriculum articulation, and sharing instructional and clerical aides. However, each classroom operates as an independent unit. Within these classrooms, each containing children from all four tracks, the individual methods used to manage instruction are varied. The methods successful in one classroom may not be successful in another due to the individual needs of the teachers, amount of aide time available, and numbers of children on each track. A few systems the classroom teachers have used are noted below:

Reading - Language Arts

If a basal reader is used as part of a reading program, children who are off-track may skip the pages read during that 3-week period. Over a year's period, all children will read the same amount of material, though not necessarily the same material.

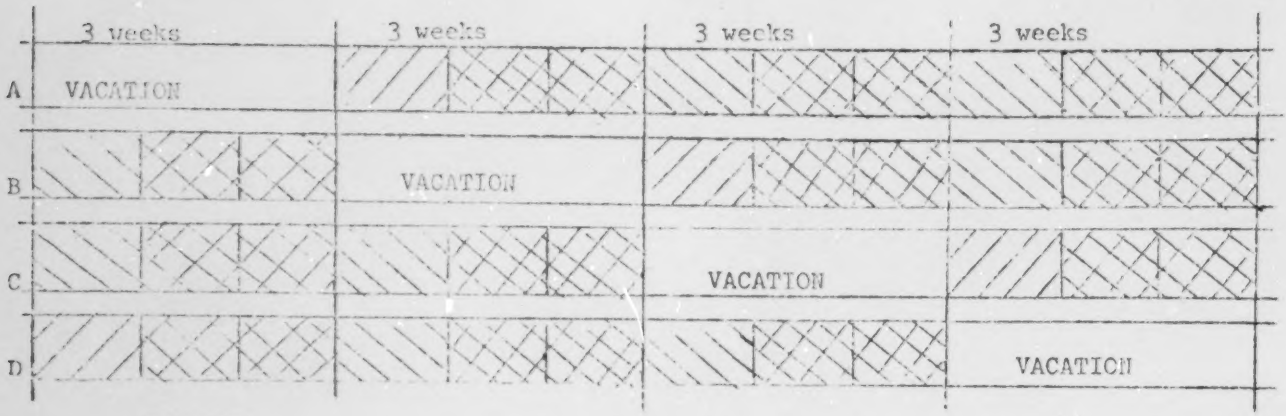
Another alternative is to form new skill groups every three weeks. This does not mean that every child has to adjust to a new situation every three weeks, because children returning from vacation may be placed into existing groups by their needs. One teacher felt that there was such a constant recycling of skills all year long that it was unnecessary to be too concerned about a group of children receiving a particular skill at the same time because it would be repeated often.

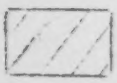
For spelling, two types of organization were noted. One utilized spelling workbooks; a child simply would begin wherever he left off upon returning from vacation. Another classroom used spelling lists each week; when a child was off track, those words were not studied. By repeating frequently misspelled words during the year, all children would receive instruction on the spelling material considered of basic importance.

Math

Many of the same grouping methods used in LA are also used in math: skill grouping, workbooks, continous repetition, etc. One teacher uses children who have just learned a new concept as tutors in helping others returning from vacation, thus reinforcing the tutors' newly learned concepts. Another teacher groups children for math according to their reasoning ability or learning stage: (1) concrete, using and manipulating visual aides; (2) symbolic, using written symbols; and (3) abstract, allowing greater independence. Within this structure, children are placed with an existing group when returning from vacation.

If an instructional aide is available the following type of scheduling may be used for math. At the beginning of each 3-week block, the first week is spent reviewing the concepts developed the previous block of time with the two tracks that were in school during that period. (An aide, under the direction of a teacher, works with this group.) The returning track spends the first week with the teacher, learning concepts developed during the previous two weeks. This teacher finds this can be accomplished because she is only working with about eight children. The final two weeks of each 3-week block is spent working with all three tracks as one group, continuing the math sequence being used. (See figure below.)



 - instruction by teacher in concepts developed previous two weeks.

- drill and practice of concepts developed previous two weeks (supervised by aide).

- group instruction to all tracks in school.

Social Studies/Science

There was a concensus in the area of social studies and science that it is not as important as in reading and math to follow a specific sequence or to insure that every child gets the exact same unit. If a unit on Colorado History is used for six to nine weeks every student will be in school for at least three to six weeks during that period. The first Monday of a 3-week block may be spent reviewing the previous three weeks' work for the benefit of both those children returning who missed it (and for those children who were in school!) If a unit is developed on a 12-week basis, during that time every child will be in school for nine weeks, thus insuring that every child would have the opportunity to cover all concepts. Keeping a notebook in this case is very useful, both as a method for each child to keep a record of what has been done and what needs to be done and as a tool for the teacher in reporting and conferencing.

Cunningham, Mission Viejo, Eastridge -- Team Teaching

Part II:

The methods of team organization used within each of the three year-round schools are dependent on several variables: numbers of children, individual teacher contract days desired, local school policy, to name a few. The organization used by an individual team for implementing curriculum, keeping records, and conferencing is, in turn, dependent on its team structure. Although there are two basic types of team organization for year-round schools, the variations based on team differences make almost as many different types of organization as there are teams.

A. One basic type of organization requires enough children in school at any one time to require the services of three 240-day teachers. In other words, this type requires the number of children for which a 4-teacher team would be responsible in a 9-month school year. With the children on that team being divided into four geographical tracks, each of the four teachers is assigned to one "track" or geographical group of children. Thus, at any one time, only three teachers and three "tracks" are in school.

The organization plan in which teachers track in a 45 - 15 pattern with the children is almost exclusively used at Mission Viejo. However, each team's implementation of that pattern differs somewhat. One team assigns a teacher to each track of children. That teacher is responsible for the reading program of each child on her track. Within this tracking group there may be four to six sub-groups for reading instruction. In addition, each child works in centers, together with children from other tracks, maintaining records of his activities by himself in an individual folder. Math groups use Addison-Wesley workbooks and are formed on a need basis throughout the team, mixing all tracks. Social studies and science units are taught on a 3-week basis and organized so that all children get all units. (See chart on page 4.) Record keeping reporting, and conferencing are the responsibilty of the track teacher only for the children on her particular track. One advantage to this type of system is that when a teacher is off track, the children for which she is responsible are also off track, thus simplifying the need for communication between teachers who are coming and going every three weeks. One major disadvantage to this system is the uneven size of tracks, meaning one teacher may be responsible for 21 children, while another has 35.

A variation on this type of plan is to group children by skill level for reading. One team forms three ability groups, using all four tracks. When children return from vacation, they return to the same group for reading. Three of the four teachers each are responsible for one of these reading groups. The fourth teacher "substitutes" every three weeks, for whichever teacher is on vacation, using her basic instructional plan. Similar to some classrooms at Cunningham, children who are tracked out skip those pages read during their vacation, because teachers feel concepts are repeated often enough to insure complete exposure. Grouping for phonics instruction on this team is by track.

Social Studies and Science Units -- On the Year Round Calendar

July 8 - Orientation - School Helpers
Safety - School Rights
Home and Family

July 29 Oceanography (Track B - School Orientation)
3 week unit

Aug. 19 Community Helpers
Goods and Services

Sept. 10 Track B - Safety - School Rights
Track C - Oceanography
Track D - Community Helpers

Sept. 30 What is Science? - Color
Space - Locating Objects - Far and Near
Maps & Globes - Introduction

Oct. 21 People and Explorers - 3 week unit
Halloween

Nov. 11 Time - Measurement
Order of Sequence
Thanksgiving

Dec. 2 Track B - What is Science - Color - Space - Globes
Track C - Explorers & People
Track D - Time - Measurement - Sequence
All - Christmas

Math instruction is planned by the reading teacher, each organizing it differently: one by track, one reintroducing concepts every three weeks, and one regrouping on a need basis. Records of each child's skill progress are kept by aides on the team and reported to parents by the reading teacher. This puts a conferencing burden on the teacher responsible for the middle ability group which is considerably larger than the other two (35 vs. 55 vs. 30). To relieve this burden, the fourth teacher substitutes for this teacher when conferencing to allow conferences during the day.

Another team uses this basic personnel plan, changing what the substitute or "floating" teacher teaches when one of the three regular teachers is off track. The floater is used as someone who "changes the pace," and provides enrichment activities not necessarily related to the previous three weeks. Social studies and science units are taught by track.

A modification of this plan is used on a team responsible for more children, requiring four teachers in the area at any one time. Children are not grouped by track but by ability. Language arts instruction is organized in 3-week units. A sequential program for math has been organized using four different texts; a child starts off where he left off upon returning to school. This program is supplemented by regrouping for instruction when the need arises. Reporting to parents is accomplished by the language arts teacher who passes the report form from teacher to teacher for evaluation in curriculum areas for which she does not instruct the child.

B. The other basic type of team organization does not have any requirements as to team size. Once the number of children to be on a team is decided, the number of teacher equivalencies is determined. When each teacher teaches is very flexible. A teacher may choose to vacation on a 45-15 plan, work up to 240 days (rare), or plan any alternative teaching schedule over 180 days.

This organizational plan in which teachers determine their own vacation schedules, within team and school constraints, is used primarily at Cunningham and Eastridge Elementary Schools. When a teacher "tracks off" for a period of time, that teaching position is filled in two different ways. One method uses what is called a floating or satellite teacher. This teacher works within a building, substituting on a team when one member is gone. This can be organized in such a way that a floating teacher actually becomes a member of the team for three to six weeks while each teacher vacations, one leaving when another returns. The other way to fill a position when a teacher vacations is to use the traditional substitute procedures. This method is normally used when the time to be filled is short -- a week or less. Consistency is accomplished by using one or two substitutes who work well with a particular team.

Individual teams within these two schools have adopted a variety of organizational plans for implementing their curriculum, recording children's progress, and reporting to and conferencing with parents. A summary follows:

Reading and Language Arts

The most common method of grouping is by ability or need. This can be accomplished two ways: permanent groups may be established, lasting at least 12 weeks, so that every child is actually in the group nine of those twelve weeks; or new groups may be formed every three weeks. In order to regroup on a need basis every three weeks, very specific records need to be kept on each child's progress. These records are kept on a group list by track or in an individual child's folder. Often these folders are colored by track for convenience. Also spiral notebooks work well for keeping a permanent record of a child's progress. One team has organized their reading and writing instructional program a year in advance, although leaving the material covered within each 12 week block of time flexible. (See charts on page 6: Reading Skills and Writing Skills Organization.) Such a plan allows grouping of a need-basis. Another team has planned out a weekly spelling program so that there are at most two

spelling groups at any one time. (See chart below: Spelling Organization.) A spelling kit that has worked well in another team is Continuous Progress in Spelling published by Economy. Together with reading instruction based aroung phonetics, this kit allows completely independent spelling progress.

Another way to facilitate regrouping every three weeks is to regroup not by specific skill needs but by a child's interests. Teachers offer classes based around a book or an interesting topic; children then sign-up for the classes they wish to attend.

Reading Skills Organization

A - C - D July 8 - July 26 Interaction	A - B - D July 29 - Aug. 16 Book Units and Basals	A - B - C Aug. 19 - Sept. 7 Book Units and Basals	Sept 9 - Sept. 27 B- Interaction C Book Units and D Basals
A - C -D Sept. 30 - Oct. 18 I.R. and Barnell Loft	A - B - D Oct. 21 - Nov. 8 I.R. and Barnell Loft	A - B - C Nov. 11 - Nov. 27 Interaction	Dec. 2 - Dec. 20 B I.R. and Barnell C Loft D Interaction

Writing Skills Organization

A - C - D July 8 - July 26 Language Experience	A - B - D July 29 - Aug. 16 Reference Skills	A - B - C Aug. 19 - Sept. 7 Handwriting	Sept. 9 - Sept. 27 B- Language Exp. C- Reference Skills D- Handwriting
A - C - D Sept. 30 - Oct. 18 Creative Writing Skills	A - B - D Oct. 21 - Nov. 8 Oral Expression	A - B - C Nov. 11 - Nov. 27 Map Skills	Dec. 2 - Dec. 20 B- C. W. Skills C- Oral Expression D- Map Skills

	July 75					August 75				September 75		
	7-11	14-18	21-25	28-1	4-8	11-15	18-22	25-29	2-5	8-12	15-19	22-26
Track A	1	2	3	4	5	6	7	8	9			
Track B				1	2	3	4	5	6	7	8	9
Track C	1	2	3				4	5	6	7	8	9
Track D	1	2	3	4	5	6				7	8	9

Math

Grouping and recording methods for math instruction are almost indentical to those for reading and language arts. The major differences is caused by the fact that math skills tend to be more sequential and specific needs diagnosed more easily. Therefore, it is somewhat easier to group students by specific skill needs or to plan a sequential learning program using books, packets, and/or teacher prepared materials. One plan used by an upper elementary team organizes the year into 12-week blocks of time, focusing on one major part of their math curriculum during each 12-week period, e.g., whole numbers, fractions, or decimals. Within each of these areas, a sequence of 3-week units is planned to meet the needs of every child. (See chart below: Math Organization.) Each unit is then individualized to meet the specific needs of that group.

Math Organization

Tracks in School	A,C,D,	A,B,D	A,B,C	B,C,D
Teacher	July 8	July 29	August 20	September 9
Mrs. A	Basic Facts	Basic Facts	Multiplication and Division	Long Division
Miss B	Multiplication and Division	Multiplication and Division	Long Division	Problem Solving
Mr. C	Long Division	Long Division	Whole Number Properties	Integers
Mrs. D	Whole Number Properties	Whole Number Properties	Integers	Problem Solving

Social Studies and Science

The consensus expressed in this curriculum area was that not every child get instruction in all content areas, but that each child get opportunities to learn the concepts and processes of social studies and science. Grouping is often accomplished by children choosing topics which interest them, developing concepts through those interests, particularly in the upper teams.

In social studies at Eastridge, units are planned to cover all of the basic conceptual areas: anthropology, sociology, geography, ecnomics, and political science. Students are encouraged to choose classes which would expose them to all five areas, also. An evaluation of conceptual development is made of each child on each three to six week unit and recorded on an individual child's record sheet with a description of the unit.

At Mission Viejo children on most teams get all units; very few individual records are kept.

Commonalities Among the Schools

Making sense of these complexities is a difficult task. Several elements of program and organization appear to be necessary or desirable for YRS to work effectively.

Efficiency. Any alleged benefits of YRS could be quickly lost through the confusion of scheduling and tracking students, individually negotiating teacher contracts and vacations, or scheduling in-service programs and committee work. Undoubtedly YRS imposes stresses on administrators and their plans. The three principals of District #5 YRS have mastered many of the knotty problems attending the institution of YRS. If confronted with so numerous management problems, less efficient administration would produce chaos.

Flexibility. The effectiveness of YRS is enhanced by any program or organizational characteristic which provides flexibility. The 45-15 plan depends on the curriculum being organized into small, three week units so that in spite of continuous breaking and reentering, students can cover all material and teachers can keep track of student progress. Individualized instruction is a critical component of YRS. There is probably more flexibility associated with a team teaching situation and open space classrooms. These arrangements lend themselves to continuous grouping and regrouping of students based on their achievements and interests and to individualized instruction and progress monitoring. With the team arrangement, the students come into contact with more than one adult and are less likely to miss the solitary teacher when he or she goes on vacation. However, the self-contained classrooms at Cunningham also work well because the teachers have insured flexibility through other administrative arrangements.

Continuity. The effectiveness of YRS would be impeded if the school made no allowance for students to be in primary contact with teachers whom they know well. This problem is approached in several ways by the three schools: 1) teachers may take their vacations while the students they are primarily responsible for are off-track; 2) extended teacher contracts may decrease the number of days when a substitute teacher is left in charge (this situation demands enormous record-keeping); 3) for teams of sufficient size, a standard "floater" may be a member of the team, substituting for each other team members who is on vacation.

Parental Support. Due to the impact of YRS on family life, parental support of the plan is essential. Contacts between school and parents increases greatly when a school becomes YR. District 5 and each YRS devote a considerable amount of attention to public relations. Care is taken to adjust student schedules to accommodate family vacations or special events. This effort has won parental support for YRS. Both Eastridge and Mission Viejo have a great number of student volunteers. Cunningham has fewer, but parents still express approval of the school.

Staff Commitment. The potential problems of YRS mainly concern effects on teachers. The YRS may cause teachers to become discontent, which can only be alleviated by their commitment to the idea and careful implementation of the program. Teachers in the District #5 YRS schools appear enthusiastic and supportive of YRS.

Issues and Problems. The implementation of YRS is not without its difficulties. Not all issues have been resolved. The following issues are or could become troublesome to YRS in District 5.

1. Extended contracts for teachers. If teachers track in and out with their students, extended contracts are less likely. Possible teacher fatigue, continuity of programs, and flexibility are a part of this issue. Opinion is divided.

2. Increased teacher responsibility. On any one school-day, a YRS teacher faces no more students than on the traditional schedule. However, the YRS teacher may have responsibility for more total students across a year; hence more conferences must be held, more parent contacted and more students evaluated. Even when a YRS teacher is on vacation, he or she is less likely than the traditional counterpart to be relieved of school responsibilities.

3. Insufficient time for long-range planning. Teachers expressed frustrations about the difficulty in getting together with other teachers for long-term planning and curriculum development. In-service education sometimes conflict with YRS. Conflicts between YR teaching schedules and calendars limit chances for advanced degree work.

4. Discontinuity of special services. Vacations of special education teachers, music and physical education teachers (who are assigned one per school) often conflict with the tracking system. During their vacation times, the students then on track may not be served.

5. Intersession activities. Students who are off-track need school and community-based activities, particularly for vacation periods in other than summer months. District 5 is studying this issue and developing programs. An additional problem is whether students in need of special education or remedial work should attend school while they are officially off track.

6. Student mobility. The three schools on YRS have high turnover rates. The YRS increases the problems which mobility cause. Teachers expressed the

need for a diagnostician to work with in-coming students to determine the levels of their academic skills.

Perceived Effects. During interviews, teachers and administrators said that they felt YRS is educationally sound. Most of them expected academic achievement to be enhanced by YRS. This expectation was based on their observation that more material is covered in YRS. They notice that when a student returns from his 3-week break he has forgotten little from the material taught before the break; little time is spent in review. YRS teachers feel that learning is continuous and motivation to learn is enhanced.

According to the perceptions of the staff, YRS has a "positive influence on student mental health." Teachers observe that students come back from their breaks refreshed and rested. Teachers believe that there is none of the trauma associated with the first week of school on the traditional schedule. Furthermore, students can look forward to their next break in the near future. According to the teachers interviewed, at the end of 9 weeks children are not as bored as they usually are at the end of the traditional school year. One teacher said "Teachers and students can tolerate each other better under this system."

The staff members stressed that the children seem to be happier under YRS. They are exposed to more adults and other children. The possible disadvantages of the YRS (e.g., confusion, discontinuity) were discounted by the teachers and administrators interviewed.

Teachers also spoke of unique opportunities for YRS students. The school may offer a balanced environmental education program because of the chance to observe nature during the summer. A wider variety of recreation and outdoor education programs can be offered. More opportunities for enrichment learning activities are claimed.

Summary

The background of YRS in District 5, the programs and organizations of the three schools, issues, and perceived effects of YRS have been described in this section. In juding the worth of YRS or deciding whether it should be expanded the reader should consider this information. The costs of YRS, the effects of YRS on academic achievement, and parents' reaction to YRS all should be weighed in relation to the characteristics of the program and its context. In this way the reader may be able to make judgments which the evaluation cannot make for him.

II. What is the reaction of parents to YRS?

More than other educational innovations, the year-round schedule directly affects the home life of pupils. The YRS represents a major change from established practice. Without the active support and endorsement of parents, the YRS idea would soon be abandoned, even if it were the most effective and efficient of educational programs. Too many conflicts with non-school activities, too much inconvenience suffered by parents would result in a withdrawal of their support. It is essential to examine the extent to which the YRS disrupts family life.

A questionnaire was developed to examine three areas of parents' concern: inconveniences brought about by the conflict of YRS with various aspects of family life, conveniences and advantages of YRS as perceived by parents, and general attitudes of parents toward the concept and implementation of YRS. Background factors were included to determine whether inconveniences, advantages, and attitudes were influenced by whether the mother was employed, whether the father was the head of the household, or by the occupational level (socio-economic status) of the father.

The questionnaire was mailed to 309 parents of children in the three year-round schools. The total number was divided according to the proportional representation of the schools; 90 to Cunningham, 80 to Eastridge, and 65 to Mission Viejo parents. The sample was selected randomly from student lists. Of the sample, 82% returned usable questionnaires after the initial letter, a followup postcard, and a telephone call to each non-respondent.

The results of the survey are reported below in three sections: Inconveniences, Conveniences and Advantages, and General Attitudes.

Inconveniences.

Fourteen sources of inconvenience which might be associated with YRS were listed. Parents were asked to indicate whether each one had been in the past or would be in the future, a serious inconvenience (SI), mild inconvenience (MI), not an inconvenience (NI), or not applicable (NA). Parents were also asked to list additional sources of inconvenience. The results are reported separately for each inconvenience. In all cases but one (Item 7) the response to each past inconvenience did not differ from the expected rate of future inconvenience. Therefore, only the responses to past inconveniences are reported here.

Item 1. Inconvenience due to a conflict of YRS with Girl Scouts or Camp Fire Girls activities such as camping or recreation programs.

Inspection of Table 1 shows that 10% or less of the respondents indicated that any inconvenience due to this source had been suffered.

Table 1

Item 1.	Cunningham	Eastridge	Mission Viejo
Serious Inconvenience	4.3%	4.3%	1.5%
Mild Inconvenience	6.4%	5.4%	2.9%
No Inconvenience	38.3%	29.3%	27.9%
Not Applicable	48.9%	59.8%	64.7%
No Answer	2.1%	1.1%	2.9%
Totals	100.0%	100.0%	100.0%

Item 2. Inconvenience because of a conflict of YRS with Boy Scouts, YMCA, or Boys Club activities such as camping or recreation programs.

Table 2 contains the percentage of response to each category. Less than 10 percent of the respondents had experienced any inconvenience due to this source.

Table 2

Item 2.	Cunningham	Eastridge	Mission Viejo
Serious Inconvenience	3.2%	3.3%	4.4%
Mild Inconvenience	7.4%	1.1%	5.9%
No Inconvenience	28.7%	37.0%	29.4%
Not Applicable	57.4%	57.6%	57.4%
No Answer	3.2%	1.1%	2.9%

Item 3. Inconvenience caused by a conflict of the YRS with so many activities of a youth organization (e.g., Scouts, YMCA, YWCA, etc.) that our child either dropped out or chose not to join the organization.

Less than 10 percent of the respondents indicated that this conflict created any inconvenience (Table 3).

Table 3

Item 3.	Cunningham	Eastridge	Mission Viejo
Serious Inconvenience	3.2%	2.2%	5.9%
Mild Inconvenience	3.2%	5.4%	1.5%
No Inconvenience	46.8%	41.3%	42.6%
Not Applicable	45.7%	48.9%	47.1%
No Answer	1.1%	2.2%	2.9%

Item 4. Inconvenience due to a conflict of the YRS with organized summer sports activities such as Little League baseball, swimming teams, tennis teams, etc.

Table 4 contains the percentage responses to each response category. About one-fourth of the respondents reported some conflict between YRS and summer sports activities. Cunningham parents experienced this inconvenience less often than parents of the other two schools.

Table 4

Item 4.	Cunningham	Eastridge	Mission Viejo
Serious Inconvenience	7.4%	10.9%	14.7%
Mild Inconvenience	17.0%	23.9%	17.6%
No Inconvenience	50.0%	40.2%	41.2%
Not Applicable	24.5%	23.9%	23.5%
No Answer	1.1%	1.1%	2.9%

Item 5. Inconvenience because the YRS interfered with family vacation plans.

Over one-third of the respondents indicated inconvenience suffered because of the interference of YRS with vacation plans. Responses are displayed in Table 5.

Table 5

Item 5.	Cunningham	Eastridge	Mission Viejo
Serious Inconvenience	10.6%	15.2%	10.3%
Mild Inconvenience	33.0%	23.9%	23.5%
No Inconvenience	50.0%	45.7%	54.4%
Not Applicable	6.4%	14.1%	8.8%
No Answer	0	1.1%	2.9%

Item 6. Inconvenience because the YRS conflicts with organized City Recreation activities during the summer, such as craft classes, camping trips, or summer camp.

Less than one-quarter of the respondents indicated that this had caused any inconvenience (Table 6)

Table 6

Item 6.	Cunningham	Eastridge	Mission Viejo
Serious Inconveneince	5.3%	9.8%	5.9%
Mild Inconvenience	18.1%	10.9%	13.2%
No Inconvenience	55.3%	50.0%	47.1%
Not Applicable	19.1%	27.2%	30.9%
No Answer	2.1%	2.2%	2.9%

Item 7. Inconvenience in arranging family activities because older brothers and sisters of YRS pupils are not on a year round schedule.

Past inconvenience and future inconvenience responses are broken down for this item and are shown in Table 7. About one-quarter of the respondents reported that this inconvenience had occurred in the past. Almost half of the group anticipated future problems when some of their

children would be on YRS and some on traditional schedules.

Table 7

Item 7.	Past			Future		
	Cunningham	Eastridge	Mission Viejo	Cunningham	Eastridge	Mission Viejo
Serious Inconvenience	9.6%	15.2%	7.4%	21.3%	25.0%	22.1%
Mild Inconvenience	13.8%	13.0%	4.4%	25.5%	22.8%	11.8%
No Inconvenience	34.0%	17.4%	30.9%	23.4%	16.3%	22.1%
Not Applicable	42.6%	53.3%	54.4%	29.8%	33.7%	41.2%
No Answer	0	1.1%	2.9%	0	2.2%	2.9%

Item 8. Inconvenience due to conflict of YRS with religious activities (e.g., Bible school, Catechism class, Hebrew school, Bible camp, etc.)

Less than one-quarter of the respondents indicated any conflict of YRS with religious activities (Table 8).

Table 8

Item 8.	Cunningham	Eastridge	Mission Viejo
Serious Inconvenience	5.3%	5.4%	8.8%
Mild Inconvenience	13.8%	13.0%	2.9%
No Inconvenience	53.2%	45.7%	39.7%
Not Applicable	26.6%	35.9%	45.6%
No Answer	1.1%	0	2.9%

Item 9. Inconvenience in arranging for child-care (babysitting) because your child's YRS.

This inconvenience had been experienced by about one-quarter of the respondents (Table 9).

Table 9

Item 9.	Cunningham	Eastridge	Mission Viejo
Serious Inconvenience	9.6%	12.0%	8.8%
Mild Inconvenience	14.9%	10.9%	20.6%
No Inconvenience	47.9%	37.0%	39.7%
Not Applicable	26.6%	39.1%	29.4%
No Answer	1.1%	1.1%	1.5%

Item 10. Inconvenience due to a conflict between the YRS and child custody arrangement for parents who do not live together.

Less than 5 percent of the respondents reported this inconvenience (Table 10).

Table 10

Item 10.	Cunningham	Eastridge	Mission Viejo
Serious Inconvenience	1.1%	1.1%	2.9%
Mild Inconvenience	2.1%	2.2%	0
No Inconvenience	14.9%	10.9%	17.6%
Not Applicable	77.7%	84.8%	75.0%
No Answer	4.3%	1.1%	2.9%

Item 11. Inconvenience because of a conflict with organized sports activities for Fall, Winter, and Spring such as football, basketball, skiing, ice-skating, etc.

Only about 10 percent of the respondents reported that this conflict was a source of inconvenience (Table 11).

Table 11

Item 11.	Cunningham	Eastridge	Mission Viejo
Serious Inconvenience	1.1%	5.4%	2.9%
Mild Inconvenience	6.4%	5.4%	8.8%
No Inconvenience	60.6%	60.9%	55.9%
Not Applicable	30.9%	27.2%	29.4%
No Answer	1.1%	1.1%	2.9%

Item 12. Inconveneince because of the YRS gives children vacations during cold winter months when there are few recreational activities and they become restless and irritable.

About one-third of the respondents indicated that this was a source of inconvenience (Table 12).

Table 12

Item 12.	Cunningham	Eastridge	Mission Viejo
Serious Inconvenience	12.8%	18.5%	19.6%
Mild Inconvenience	14.9%	19.6%	17.4%
No Inconvenience	66.0%	55.4%	56.5%
Not Applicable	5.3%	5.4%	5.4%
No Answer	1.1%	1.1%	1.1%

Item 13. Inconvenience caused by the YRS in transporting children (one's own and neighbors, perhaps) to and from school in car pools.

Less than 10 percent of the respondents indicated that source of inconvenience (Table 13).

Table 13

Item 13.	Cunningham	Eastridge	Mission Viejo
Serious Inconvenience	5.3%	2.2%	2.9%
Mild Inconvenience	5.3%	1.1%	2.9%
No Inconvenience	50.0%	42.4%	36.8%
Not Applicable	38.3%	52.2%	54.4%
No Answer	1.1%	2.2%	2.9%

Item 14. Inconvenience because of a conflict between the YRS and the school district's summer-school remedial or enrichment educational programs.

Less than 10 percent of the respondents indicated that this was an inconvenience (Table 14).

Table 14

Item 14.	Cunningham	Eastridge	Mission Viejo
Serious Inconvenience	3.2%	1.1%	4.4%
Mild Inconvenience	3.2%	5.4%	4.4%
No Inconvenience	53.2%	46.7%	39.7%
Not Applicable	39.4%	43.5%	47.1%
No Answer	1.1%	3.3%	4.4%

Parents were asked to estimate the number of times they had experienced inconveniences due to the YRS. The average number reported by Cunningham parents was 4.4. This figure excludes those who reported no inconvenience at all. The average number of times inconvenienced by Eastridge parents was 3.4. The average for Mission Viejo parents was 6.7.

Additional Inconveniences. None was listed by more than 5 percent of the respondents except the following: "Inconvenience caused by having older children on traditional schedule." A list of additional inconveniences mentioned by the respondents is given in Appendix A.

Advantages of the Year Round Schools

Five advantages or conveniences for YRS were listed. Parents were asked to respond to each statement by indicating Strong Agreement (SA), Moderate Agreement (MA), Indifference or No Opinion (I), Moderate Disagreement (MD), or Strong Disagreement (SD). They were also asked to list additional conveniences and advantages of YRS. Table15 consists of the five advantages/conveniences and the percentage of response to each category.

Table 15

		School		
	Response	Cunningham	Eastridge	Mission Viejo
1. The YRS makes arranging our family vacation more convenient than the traditional school year.	SA	32%	29%	28%
	A	22	20	21
	I	12	15	18
	D	14	19	15
	SD	17	15	15
2. The YRS is more convenient than the traditional schedule for us because one parent cannot be home all the time because of work.	SA	20%	10%	10%
	A	11	4	10
	I	50	66	59
	D	4	4	3
	SD	9	11	12
3. The YRS is more convenient than the traditional school calendar for our family because we have more than one child in school.	SA	19%	10%	4%
	A	13	11	13
	I	43	47	57
	D	7	11	6
	SD	12	16	16
4. The YRS is better than the traditional calendar because our child maintains more momentum for learning and forgets less without the interruption of a three-month vacation.	SA	63%	60%	47%
	A	15	19	35
	I	7	3	3
	D	4	7	6
	SD	6	9	7
5. The YRS is more convenient than the traditional schedule because it give us more time for the winter sports we enjoy.	SA	16%	27%	16%
	A	20	14	31
	I	46	35	38
	D	4	5	4
	SD	10	16	6

About half of the respondents have founded more convenient to schedule vacations around the YRS calendar. About one-third of the parents disagreed with the statement. This figure corresponds to the results from the section on inconvenience (Item 5). About forty percent of the respondents appreciate the mid-year vacations so that they can enjoy winter sports. A large majority (80 percent) of the parents feel that their children maintain momentum for learning and forget less over the vacation time.

Many additional conveniences were listed by the parents. The following were mentioned by ten or more respondents. Others are listed in Appendix B.

"We like vacation times in seasons other than summer."

"The physical facilities and resources of the school are used all year long; this is more efficient and keep taxes down."

"Children don't get as irritable and bored during the short vacations as they do during three-month vacations. There are several small vacations to look forward to."

"Children don't get so tired of school."

"More learning takes place because learning is continuous and the learning environment is better."

Attitudes Toward Year-Round Schedule

Five questions designed to elicit parent attitudes toward YRS were posed. Each is considered separately in this report.

Item One. Which school calendar do you prefer?

Table 16 contains response percentages to each option, broken down by school. The stated preferences were approximately the same for the three schools with about three-quarters of those who expressed any preference for schedules preferring the YRS.

Table 16

Item 1.	Cunningham	Eastridge	Mission Viejo
Traditional Schedule	18%	23%	19%
Year-Round Schedule	72%	65%	63%
A Different Schedule	0	2%	3%
No Preference	7%	7%	10%
No Answer	2%	3%	4%

Preference for YRS was not related to background variables such as head of pupils household, employment status of mother, or occupational level (socio-economic status) of the father.

Item 2 and 3. Problems associated with the administration of YRS.

The percentages of response to each option are listed in Tabel 17. A minimum of serious problems had been experienced. A majority reported that the administration of YRS had been smooth and free of major problems.

Table 17

Item 2. The administration of the year-round calendar in our school has been....

	Cunningham	Eastridge	Mission Viejo
a) smooth and free of major problems	62%	61%	40%
b) caused some minor problems	21%	13%	40%
c) given rise to serious and disruptive problems	3%	4%	7%
d) I am not well enough acquainted with the program to have an opinion	12%	20%	7%
f) no answer	2%	2%	6%

Item 3. The inconveniences and problems we have had with the year round school calendar.....

	Cunningham	Eastridge	Mission Viejo
a) were worse in the beginning but are now working out OK	19%	7%	18%
b) were as bad in the beginning as they are now	11%	14%	16%
c) are worse now than they were in the beginning	4%	0	4%
d) we have had no problems with it	49%	61%	38%
e) we haven't had enough experience with it to judge	12%	12%	13%
f) no answer	5%	7%	10%

Item 4. Parents were equally divided in their opinions about which schedule caused greater inconveniences and scheduling conflict for families (Table 18).

Table 18

In your opinion, which type of school calendar causes greater inconveniences and scheduling conflicts for families

	Cunningham	Eastridge	Mission Viejo
The year-round schedule	30%	35%	35%
The traditional schedule	31%	21%	25%
No Opinion	35%	41%	34%
No Answer	4%	3%	6%

Item 5. A criticism against YRS is that the short vacations do not give young children enough time to rest between school sessions. Parents were asked to respond to this question. About 80 percent disagreed (Table 19).

Table 19

What is your opinion of this statement? "The year-round schedule does not give our child (children) enough rest; they need a longer vacation from school like the traditional schedule."

	Cunningham	Eastridge	Mission Viejo
Agree	9%	14%	7%
Disagree	79%	78%	84%
No Opinion	11%	5%	4%
No Answer	2%	3%	4%

Summary

The YRS is the source of some inconvenience to families. This is especially true in relation to planning family vacations. A problem exists for those families having older children in middle schools or the high school which

operate on the traditional calendar. However, no single source of inconvenience was mentioned by a majority of parents. Parents see many advantages for YRS which probably outweigh the inconveniences expressed. Despite the inconveniences enumerated, the great majority of parents endorsed the YRS concept. Many took the opportunity offered by the questionnaire to write enthusiastically about the YRS and the quality of education at these three elementary schools. A very few parents expressed complaints. However, the weight of parent opinion is clearly behind the year-round school.

III. What are the effects of YRS on student achievement?

Proponents of YRS argue that less learning is lost during the several three-week vacations than the three-month break of the traditional schedule. As a result, less class time should be taken up in review of material covered before the break; momentum for learning is maintained. Opponents of YRS express concern for the detrimental effects on achievement of fatigue and disruption in YRS. The purpose of this part of the evaluation was to determine whether students in YRS achieve differently from non-YRS students.

Three subordinate questions were addressed. Is the effect of YRS on achievement different for the three YRS schools in District #5? Is the effect of YRS on achievement different for students of different intellectual abilities? Is the effect of YRS on achievement different for students at different grade levels?

To assess the effects of an educational program on academic achievement, it is necessary to look at background factors which also affect achievement. Both intellectual abilities (IQ) and home environment (SES)* are outside the influence of the school but always account for differences in student achievement. In the evaluation of YRS, differences in IQ have been accounted for by forming groups of non-YRS students matched with YRS students on IQ and comparing the achievement of these groups. Any differences in achievement between the groups can not be attributed to pre-existing differences in intelligence. The YRS vs. non-YRS achievement difference will reflect the influence of YRS as well as uncontrolled factors (e.g. SES) other than IQ. All other effects (e.g. SES) besides the effect of YRS, but excluding the effect of intelligence will be reflected in the achievement

*No SES measure was available for the analyses reported here.

differences.

Whenever two groups are matched on IQ a statistical problem known as regression arises. The group which is lower on IQ before matching will appear to be lower on achievement than it actually is. This problem will be discussed with the results of the analysis. The advantages of matching outweigh the problems. To look at achievement differences without considering intelligence is misleading. The school with high achievement test results receives undue credit; its advantage may be the advantage of better raw material rather than more effective educational programs.

The matching process in this study used the master file of test scores from the District 5 Office of Program Evaluation. Students were selected from nine elementary schools on traditional schedules.* The students matched students at Cunningham on grade, sex and IQ. All students so selected formed a school-group labeled "Cunningham-Match." Similar procedures were followed to form a group which matched Eastridge ("Eastridge Match") and Mission Viejo students ("Mission Viejo Match"). A student was included in these school groups only if both IQ and achievement test data were available. All students who missed the regular or make-up testing sessions in January, 1975 were excluded. Also excluded were students who had changed elementary schools between the time IQ and achievement tests were taken or who had not been in the district long enough to have an IQ score on file. Approximately 25 percent of the original test file were excluded by these procedures. Two percent of YRS students were dropped because they could not be matched on IQ (within a

*Polton was excluded because of its temporary experience on YRS.

range of five points) with students from the district at large. Two percent were dropped due to unreadable scores or clerical errors.

The six groups (Cunningham, Cunningham-Match, Eastridge, Eastridge-Match, Mission Viejo, Mission Viejo-Match) were divided into ten IQ categories. This division was to determine whether the YRS is differentially effective for students of different levels of intelligence.

Intelligence tests used by District 5 are the Lorge-Thorndike Intelligence Test and the Otis-Lennon (grade 2) Mental Ability Test (grades 4 and 6). The Iowa Test of Basic Skills (grades 3-6) is used as the measure of academic achievement. These are reputable, widely-used tests.

The statistic used for the inspection of achievement differences was the achievement discrepancy score. The Iowa Test of Basic Skills (ITBS) grade equivalence scores are derived from national norms in vocabulary, reading, language-skills, work study skills, and arithmetic. Grade equivalent scores are interpreted as follows: a pupil's score in reading of 3.7 indicates that the child's test performance is equal to that of the average pupil in the nation who is studying in the 7th month of the 3rd grade; a pupil scoring 6.1 in math answers the same number of math items correctly as the average pupil in the 1st month of the 6th grade. Grade equivalent scores such as 9.2, 5.0, etc. have similar interpretations.

For the present study, achievement has been measured as a discrepancy between a grade-equivalent score and a "grade placement." For example, a pupil in the 6th month of the 4th grade has a grade placement of 4.6; if his grade-equivalent score in reading is like that of the average pupil in the 8th month of the 5th grade, then his achievement discrepancy score is 5.8-4.6= 1.2. In a sense, this student is achieving one year and two months in reading

beyond his grade placement. A negative achievement discrepancy score indicates that a pupil's achievement lags behind his grade placement.

The testing was conducted in January, 1975. The grade placement for all students was G.4 where G is the grade (3rd-6th) and 4 is the number of months of schooling completed by the time of testing. The selection of 4 as the number of months is an arbitrary convention due to the uncertainty of actual number of months completed by students on each track of YRS. There is no reason to believe that the selection biases any results, however. Using achievement discrepancy scores permits the aggregation of data across the the four elementary grades and eases reporting. Additional analyses were performed on the grade equivalent scores within each grade level. This was done to determine whether YRS-traditional differences were constant across grade levels.

Results

The average achievement discrepancy scores for the vocabulary, reading, language skills, work study skills, and arithmetic measures are presented in Tables 1 through 5 respectively. The averages are cross-tabulated by school-group and IQ level.

Several findings are noteworthy. It is apparent that the three YRS cannot be directly compared to one another. Examining Table 1 one finds greater numbers in low IQ categories at Cunningham than at the other two schools. The number at Cunningham of IQ below 98 is 108, whereas the numbers in that IQ category for Eastridge and Mission Viejo are 66 and 39 respectively. To disregard pre-existing differences would make it seem that programs at Cunningham were less effective than programs at the other two schools.

The correct comparison is between Cunningham and students of similar abilities throughout the district, represented by Cunningham-Match. The differences between these two groups were small. On Table 1 are the achievement discrepancy scores in vocabulary for each school-group. On the left hand column of the table the average achievement discrepancy score for each school-group is immediately below the name of the group. The achievement discrepancy score in vocabulary is .18 for Cunningham and .35 for Cunningham-Match. This means that the average for Cunningham students (across grades 3 to 6 and across all IQ levels) is about 2 months ahead of grades placement (G. 4), but about 2 months behind the average for Cunningham-Match. Looking at all achievement measures (Tables 1-5), one finds that average achievement discrepancy scores for Cunningham were 1 to 3 months below those of the matched group. Two explanations for this difference may be posed. First, no SES measure was available. Correction for SES would have reduced slightly the differences in achievement, since average SES for the Cunningham attendance area would be lower than for the district as a whole. Second, the phenomenon of statistical regression was present. Because the IQ of Cunningham students is lower than the average for the district (from which the matched group was selected) differences in achievement between the two groups appeared to be greater than they actually were.

The differences between Eastridge and Eastridge-Match and between Mission Viejo and Mission Viejo-Match were small and unimportant on each of the measures. The achievement discrepancy scores of the matched groups exceeded those of YRS by one to three months.

Examination of the achievement discrepancy scores for each IQ level revealed no consistent or important differential effect of YRS.

Grade equivalent scores for each school and its matched group were analyzed separately for each grade (3-6). In all cases but one the differences in grade equivalent scores between each school and its matched groups were small and unimportant. This was true for all grades, IQ levels and achievement measures. The exception is shown in Table 6. For the arithmetic measure, sixth graders at Eastridge had higher grade equivalent scores than those of the matched group. The effect of YRS on arithmetic of 6th graders at Eastridge cannot be separated from the effects of other characteristics of the Eastridge program or student body, however. For example, teachers may be more experienced, curriculum or materials or the organization of the school might be more effective. Furthermore, this effect was the most discrepant one found in the study and may have been a statistical artifact which would not be found in a replication.

Summary of Questions and Results

What is the effect of YRS on student achievement? The achievement of students in YRS is no better or worse than the achievement of students in traditional schools once initial intellectual ability is accounted for. The samll differences which do exist are not educationally significant and should not be interpreted as a negative effect of YRS.

Is the effect of YRS on achievement difficult for the three schools involved?

The differences among the three schools are small and insignificant, once background factors are accounted for.

Is the effect of YRS on achievement different for students of different intellectual abilities?

No consistent or important effects of YRS at different IQ levels were found.

Is the effect of YRS different for students at different grade levels?

Achievement differences between YRS students and matched students were consistent across all grade levels on all measures.

TABLE I

Average Achievement Discrepancy Scores in Vocabulary for Grades 3-6

Classified by School-Group and IQ

	IQ 91 and below	92 - 101	102 - 109	110 - 119	120 and above
Cunningham $\bar{X}$= .18	-1.06 n=56	-.25 n=103	.34 n=81	.78 n=69	1.74 n=38
Cunningham-Match $\bar{X}$= .35	- .67 n=54	-.03 n=106	.78 n=78	1.14 n=73	1.50 n=40
Eastridge $\bar{X}$= .57	- .56 n=37	.01 n=50	.23 n=48	1.13 n=85	1.47 n=71
Eastridge-Match $\bar{X}$= .70	- .66 n=38	-.15 n=49	.75 n=50	1.13 n=95	1.80 n=74
Mission Viejo $\bar{X}$= .54	-1.04 n=25	.03 n=25	.34 n=47	.84 n=59	1.60 n=39
Mission Viejo-Match $\bar{X}$= .69	- .71 n=22	.03 n=37	.52 n=48	1.05 n=60	1.86 n=40

TABLE II

Average Achievement Discrepancy Scores in Reading for Grades 3-6

Classified by School-Group and IQ

	IQ 91 and below	92 - 101	102 - 109	110 - 119	120 and above
Cunningham $\bar{X}$= .18	-1.25 n=56	-.26 n=103	.04 n=81	.74 n=69	1.77 n=38
Cunningham-Match $\bar{X}$= .47	- .77 n=54	-.30 n=106	.50 n=78	1.18 n=73	1.65 n=40
Eastridge $\bar{X}$= .66	- .71 n=37	-.22 n=50	.11 n=48	1.00 n=85	1.55 n=71
Eastridge-Match $\bar{X}$= .79	- .85 n=38	-.23 n=49	.25 n=50	.86 n=95	1.27 n=74
Mission Viejo $\bar{X}$= .53	- .91 n=25	.01 n=25	.53 n=47	.75 n=59	1.48 n=39
Mission Viejo-Match $\bar{X}$= .71	- .83 n=22	.05 n=37	.45 n=48	1.02 n=60	1.87 n=40

TABLE III

Average Achievement Discrepancy Scores in Language Skills for Grades 3-6

Classified by School-Group and IQ

	IQ 91 and below	92 - 101	102 - 109	110 - 119	120 and above
Cunningham $\bar{X}$= .14	-1.23 n=56	-.21 n=103	.13 n=81	.89 n=69	1.79 n=38
Cunningham-Match $\bar{X}$= .50	- .57 n=54	.02 n=106	.62 n=78	1.20 n=73	1.70 n=40
Eastridge $\bar{X}$= .57	- .85 n=37	-.23 n=50	.18 n=48	.96 n=85	1.71 n=71
Eastridge-Match $\bar{X}$= .84	- .75 n=38	-.08 n=49	.80 n=50	1.20 n=95	1.90 n=74
Mission Viejo $\bar{X}$= .46	- .93 n=25	-.30 n=25	.40 n=47	.67 n=59	1.63 n=39
Mission Viejo $\bar{X}$= .78	- .74 n=22	-.04 n=37	.55 n=48	1.19 n=60	2.00 n=40

TABLE IV

Average Achievement Discrepancy Scores in Work Study Skills for Grades 3-6

Classified by School-Group and IQ

	IQ 91 and below	92 - 101	102 - 109	110 - 119	120 and above
Cunningham	- .88	-.10	-.15	.87	1.91
$\bar{X}$= .24	n=56	n=103	n=81	n=69	n=38
Cunningham-Match	- .68	-.11	.58	1.11	1.52
$\bar{X}$= .40	n=54	n=106	n=78	n=73	n=40
Eastridge	- .70	-.29	.01	.82	1.67
$\bar{X}$= .51	n=37	n=50	n=48	n=85	n=71
Eastridge-Match	- .75	-.03	.63	1.10	1.77
$\bar{X}$= .77	n=38	n=49	n=50	n=95	n=74
Mission Viejo	-1.00	-.32	.27	.64	1.41
$\bar{X}$= .38	n=25	n=25	n=47	n=59	n=39
Mission Viejo-Match	- .39	-.10	.28	1.15	1.74
$\bar{X}$= .69	n=22	n=37	n=48	n=60	n=40

TABLE V

Average Achievement Discrepancy Scores in Arithmetic for Grades 3-6

Classified by School-Group and IQ

	IQ 91 and below	92 - 101	102 - 109	110 - 119	120 and above
Cunningham $\bar{X}$= .00	- .91 n=56	-.40 n=103	-.08 n=81	.59 n=69	1.52 n=38
Cunningham-Match $\bar{X}$= .16	- .77 n=54	-.26 n=106	.25 n=78	.57 n=73	1.32 n=40
Eastridge $\bar{X}$= .31	- .79 n=37	-.33 n=50	-.15 n=48	.51 n=85	1.40 n=71
Eastridge-Match $\bar{X}$= .54	- .84 n=38	-.20 n=49	.38 n=50	.85 n=95	1.46 n=74
Mission Viejo $\bar{X}$= .18	-1.12 n=25	-.47 n=25	.00 n=47	.47 n=59	1.20 n=39
Mission Viejo-Match $\bar{X}$= .44	- .80 n=22	-.18 n=37	.16 n=48	.79 n=60	1.52 n=40

TABLE VI

Grade Equivalent Scores in Arithmetic for Eastridge
Classified by Grade and IQ

	≤80	81-91	92-97	98-101	102-105	106-109	110-113	114-119	120-130	≥131
3rd Grade										
Eastridge $\bar{X}$=3.7	---	3.02	2.87	3.07	3.47	3.12	3.14	3.60	4.26	4.60
Eastridge-Match $\bar{X}$=4.12	---	2.88	4.90	3.90	3.58	4.02	4.10	3.90	4.47	4.80
4th Grade										
Eastridge $\bar{X}$=4.37	3.67	3.15	3.84	3.77	4.10	4.26	4.18	4.67	5.11	5.65
Eastridge-Match $\bar{X}$=5.05	3.47	3.95	4.11	4.48	4.63	5.41	5.29	5.49	5.62	6.16
5th Grade										
Eastridge $\bar{X}$=5.80	4.43	4.66	5.42	4.66	4.78	5.16	5.97	6.53	7.08	7.60
Eastridge-Match $\bar{X}$=6.10	4.07	4.79	5.30	5.16	5.60	6.55	6.09	8.67	7.09	7.64
6th Grade										
Eastridge $\bar{X}$=7.00	5.25	5.65	6.49	6.10	6.42	6.60	7.36	7.31	8.46	9.53
Eastridge-Match $\bar{X}$=6.55	4.80	5.42	5.76	5.98	6.12	6.53	7.15	6.98	7.96	8.65

IV. What are the costs of YRS compared to the costs of alternative scheduling systems?

This analysis is not a detailed accounting of expenditures for YRS in Cherry Creek. The fundamental cost question is whether YRS are cheaper or more expensive than traditional schools, and there are several reasons why that question cannot now be addressed directly for Cherry Creek schools.

First, costs of traditional and YRS in the district are currently nearly equalized, probably more for reasons or morale than of equal financial need. Second, true differences in operating traditional and YRS are probably quite small, as investigators in other locales have concluded (see Scriven, 1975). Third, apart from alleged "psychological" or instructional advantages of YRS, their raison d etre is the economical accommodation of increasing enrollments; as such, the economic value of YRS must be addressed across a future of projected enrollment growth and in comparison to other methods of growth absrobtion not now significantly employed in the district (e.g., double sessions, attendance "redistribution" to fill existing schools to capacity, trimester schedules, temporary buildings, expansion of existing buildings, student exchange with neighboring districts, cross-age teaching).

Thus, the following cost analysis is comparative and projective. It will not be precise nor nearly as accurate as one expects a retrospective cost accounting to be. It will project alternative future states which will never occur. It is neither a prediction nor a forecast, although it depends in essential ways upon enrollment predictions which we regard as accurate. Rather, we shall sketch alternative plans for accommodating enrollment growth over the next ten years and then assess approximate costs of the alternatives. Comparison of the costs of the plans should illuminate the question of the costs of YRS and enable administrators, teachers, and parents to make informed choices.

COSTS OF METHODS OF ACCOMMODATING GROWTH

Year-Round Schools vs. Traditional Schools

The obvious cost advantage of YRS -- 45-15 -- is that the capacity of a school building can be increased by 33 1/3% without physical expansion. Thus, three YRS can accommodate the enrollment held by four schools on a traditional calendar. We cannot verify significant differences in operating costs between traditional and YRS of equal pupil enrollments. Approximately 30 pupils require one teacher for roughly 180 days each year; and this expense for staff -- which constitutes nearly three-fourths of the elementary school operating budget -- is the same for traditional and YRS. The second major expense at the elementary level, viz., materials and supplies -- is primarily a per pupil cost and can be expected not to rise or fall significantly in YRS.

Aside from these major cost items (staff and materials) which comprise about 90% of the operating budget, there exist a large number of minor cost questions bearing on the comparative expense of traditional and YRS. Building a YRS costs about the same as building a traditional school, namely $1.5 million for an elementary school for between 500 and 600 pupils. Air-conditioning is mandatory for the YRS and optional, though apparently increasingly desirable, for the traditional school. Nonetheless, in austerity, not having to air-condition traditional schools is a potential savings. We shall add the cost of air-conditioning ($100,000) to each YRS and not to that of building a traditional school. An easily overlooked cost of building any school, traditional or YR, is the expense of preparing for a bond election. Administrative

staff time is required for drawing up plans to propose to the electorate. We estimate that preparation for a bond election costs the services of an administrator and his staff at the assistant superintendent level for two months full time: $5,000. If four or five elementary schools are covered by the same bond election, the cost of preparing the bond can be as low as $1,000 per school. This expense is minor and is incurred in building traditional schools as well; since one builds three YRS in place of four traditional schools, the savings in costs of raising capital for YRS is only $1,000/3 = $330 per school. Instituting a YRS incurrs a not unsubstantial cost in public relations needed to sell the idea to parents. Though we recognize this indirect cost and are concerned about it, we can not attach a dollar figure to it -- even less can we speculate about whether the public relations will be less or more expensive in the future.

To illustrate further the uncertainty and complexity in this type of cost analysis, consider the problem of foregone property tax for the land on which a school is built. The school takes over the land, usually quite desirable to builders, which might have been occupied by about twenty houses each of which would pay an average of $750 annual property tax; a total of $15,000 annually, most of which would have gone to the schools. However, the revenue is lost only if construction of the school displaces the persons who would have built on the land into another school district. If instead they build elsewhere within the district, the revenue is not lost. Who knows where they might build? The situation is even more complex than this. Building a school typically increases the value of homes in the vicinity; thus, the property tax base increases and the schools receive more money. But how much

does it increase property values and how large is the "vicinity"? No simple answers exist, and we must beware of attributing any advantages to either traditional or YRS in this area.

Operating expenses other than teaching staff and instuctional supplies include costs of administrative and service staffs (clerks, cooks, nurses, psychologists, janitors, etc.), utilities and maintenance. Principals in YRS have already established the principle of added pay for added student contact days, so that YRS offer no savings over traditional schools in this respect. The same is true for special services of nurses and psychologists, although clerical and janitorial staff are unaccountably exempted from this largess. We suspect that the latter groups will soon follow the example of their professional colleagues and also receive added pay for added work. Another added expense likely to be encountered in the future is that of replacement costs for a vacationing principal; no special accommodations are now made when the principal takes leave. We estimate that all of these additional expenses account for little more than percentage point or two cost differential in the operation of YR and traditional schools. We shall disregard them in our analysis.

The average traditional elementary school in Cherry Creek has a capacity of 570 pupils. The average YRS with a building of similar capacity can accommodate 760 pupils. Since YRS have one-third greater capacity than traditional schools, four traditional schools are required to accommodate the enrollment held by three YRS. Building costs are 33% greater for traditional schools than for YRS. We can find few other consistent striking cost (initial or operational) differences between the two types of school with the possible

exception of air-conditioning for YRS. Hence, the average traditional school can accommodate 760 pupils with an initial capital expense of $1.5 million + $.5 million = $2.0 million, and the average YRS can serve the same number of pupils at an initial cost of $1.5 million + $.1 million = $1.6 million.

Converting Traditional Schools to YR.

The capacity of a traditional school can be increased by 33% simply by converting it to a year-round calendar. The only significant added cost ($100,000)* is that of air-conditioning the building. Cherry Creek has ten traditional elementary schools with total capacity of 5,605 pupils. Converting them to YRS would permit an increase in capacity of 5,605/3 = 1,870 pupils at a cost of 10 x $100,000 = $1.0 million.

Filling Existing Schools to Capacity (Redistribution).

Vacancies exist in existing elementary schools (both traditional and YR). They represent a means of dealing with increased enrollments at no capital expense and very little operational expense. Filling the buildings to capacity poses a problem in redistribution of attendance. This can be done in several ways, foremost among them being (a) busing pupils to schools outside their immediate neighborhood and (b) redrawing attendance boundaries. Option (a) seems viable in the district, busing not having assumed the antipathetic connotations in Cherry Creek that it has in many districts.

*Adding air-conditioning to an older building not designed for it, incurrs an expense of about $150,000. Air-conditioning an existing building designed for easy conversion to air-conditioning costs around $75,000. District-wide we estimate the conversion to air-conditioning to average $100,000 per school.

It is not a "no-cost" option, though its costs -- almost entirely operational -- are very low relative to building new schools. Current busing costs average $3.50/hour and $0.19/mile for a bus of 66 passengers. Option (b) is nearly a no-cost item and could be achieved with rather minor changes in attendance boundaries. However, we sense some intolerance among parents, particularly in established neighborhoods, with such changes. Nevertheless, the cost and convenience of option (b) are so much more desirable, that we recommend it as the redistribution method of choice.

There are ten traditional elementary schools in Cherry Creek with a total capacity of 5,605 pupils and a total enrollment (as of October 1974) of 5,000 pupils. In addition, there are three YRS with total capacity of 2,367 pupils and enrollments of 2,042. Hence, a total of 930 additional elementary pupils can be served by filling existing schools to capacity. This accommodation can be made at little cost beyond the costs of teaching staff and materials which are present under any alternative. The yearly cost of busing 930 pupils an average of six miles per day (two hours per day) equals $20,500. Over ten years, the costs would amount to $205,000.

Temporary Buildings

Using temporary structures to accommodate overflow attendance is an economical method, particularly if the long-range growth patterns of a school district are uncertain. If it were known that a district's enrollment would stop and turn down within ten years, temporary buildings would be cost-efficient. We estimate that temporary buildings on the grounds of existing schools could accommodate pupils at a rate of $50,000 per 100.

Additions to Existing Buildings

Constructing additions to extant buildings is somewhat more expensive initially than constructing new schools, since renovation is always more expensive than new construction. However, the operational costs (maintenance, utilities, etc.) of the expanded buildings would be increased by less than the operational costs of new, separate buildings. We don't know enough of the parameters in this complex equation, so we rate "additions to existing buildings" a dead-beat with constructing new buildings, and we shall not estimate its costs separately from those of erecting new buildings.

Double Sessions

The cost-cutting champion is double-sessions; industry is far ahead of education in capitalizing on this fact. It increases capacity of buildings by 100% at no cost above the inevitable cost of teaching staff and materials. Even if the instructional day is shortened for each pupil by an hour or so, the school year could be extended slightly so that pupils on double sessions would not suffer a reduction in instructional time.

The average traditional elementary school in Cherry Creek could serve 1140 pupils on double sessions. The typical YRS could expand its capacity to 1580 pupils on double sessions. The total capacity of existing Cherry Creek elementary schools could be increased to 16,140 if all 13 schools ran double sessions.

Other Methods

There exists a variety of other methods of accommodating increased pupil enrollments: trimester schedule, cross-age teaching, purchasing instructional services from neignboring districts, etc. None of these appears to have strong backing within the Cherry Creek district; none of them plays any role in our cost projections.

ENROLLMENT PROJECTIONS

YRS are fundamentally a means of coping with growth. Their potential cost savings depends on the pattern of growth in the school district. Therefore, it is essential to project enrollments into the future before assessing the potential savings of YRS and other means of accommodating growth.

We collected elementary school attendance figures for the month of October for the years 1963-74. Mathematical methods of time-series analysis were applied to these data to obtain projected elementary school enrollments each year for the next 10 years. These projections are in the form of "most probable," and "lowest probable" numbers of pupils.* The projection has a one-fourth probability of exceeding the "highest probable" figure, and a

*Our methods of projection rest on the mathematical theory of time-series analysis due to Box and Jenkins, as presented in their work Time-series Analysis: Forecasting and Control (San Francisco: Holden-Day, 1970). Essentially, it was determined that the enrollment data for the past twelve years in Cherry Creek follow a whitenoise process in their second differences, i.e., $z_t - 2z_{t-1} + z_{t-2}$ is random error. The lag1 thru lag5 autocorrelations of the second differences of the data were -.01, -.28, -.05, .01 and -.03, respectively. Thus, the first-differences of enrollment, i.e., yearly growth, is predictable, but second differences, i.e., change in rate of yearly growth, are not. Consequently the best prediction of enrollments lies along a straight line with constant slope $z_{12} - z_{11}$. The standard error of the prediction a time $\underline{t} + 12$ is given by

$$\sigma_e = \sigma_a \sqrt{1^2 + 2^2 + 3^2 + \cdots + t^2} \quad .$$

one-fourth probability of falling below the "lowest probable" figure. Thus, it has an even chance of falling in the reported range between "highest" and "lowest probable." These projected enrollments are graphed in Figure 1.

The most important feature of the enrollment projections is the increase in numbers of pupils over the ten year period of the projection. This increase must be accommodated through some combination of scheduling and building methods. The enrollment growth by 1984 at the elementary level is likely to lie on the following range:

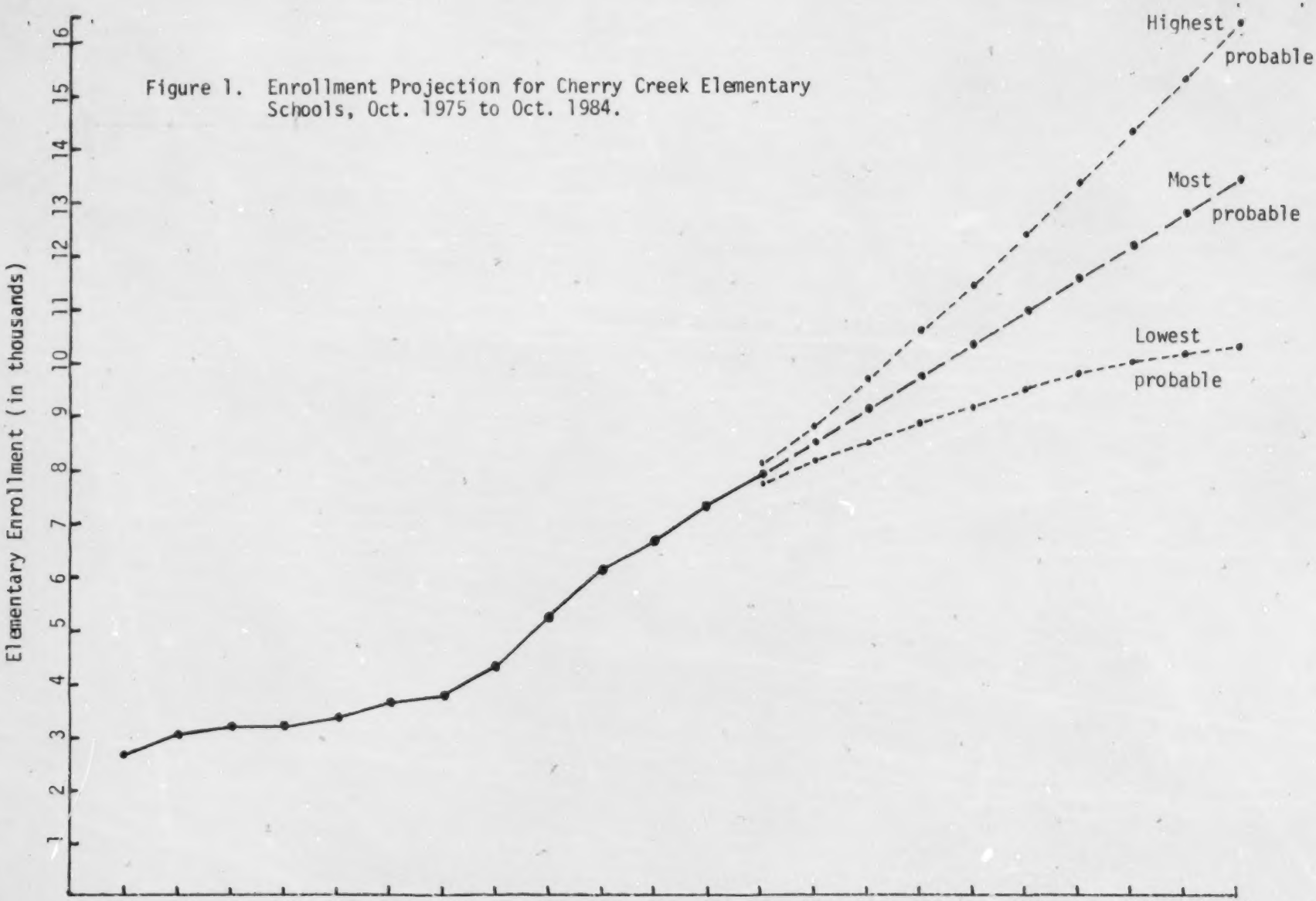
Lowest Probable Enrollment Growth by 1984:	Most Probable Enrollment Growth by 1984:	Highest Probable Enrollment Growth by 1984:
3,160	6,140	9,120

The most probable projection is that elementary enrollments will nearly double over the next ten years: 7,300 in 1974 to 7,300 + 6,140 = 13,440 in 1984. It is conceivable that enrollments could be as high as 7,300 + 9,120 = 16,420 at the elementary level by 1984; and it is improbable that they would fall below 7,300 + 3,160 = 10,460. These projections are quite consistent with an informal assessment of the growth potential of the Cherry Creek attendance area. Continued growth is indicated by several signs: the district encompasses many undeveloped areas; growth to the east is nearly unbounded; many areas are zoned for multi-family dwellings; corporate growth is expected at the Denver Tech Center and Inverness Park; Denver suburbs growth is unabated.

COMPARATIVE COSTS OF PLANS FOR ABSORBING GROWTH

The problem is to accommodate somewhere between 3,160 and 9,120 -- most probably 6,140 -- additional elementary enrollment in Cherry Creek by 1984.

Figure 1. Enrollment Projection for Cherry Creek Elementary Schools, Oct. 1975 to Oct. 1984.


Highest probable
Most probable
Lowest probable
Elementary Enrollment (in thousands)
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
'63 '64 '65 '66 '67 '68 '69 '70 '71 '72 '73 '74 '75 '76 '77 '78 '79 '80 '81 '82 '83 '84
Year

	'75	'76	'77	'78	'79	'80	'81	'82	'83	'84
Highest probable projection:	8.0	8.8	9.7	10.6	11.5	12.4	13.4	14.3	15.4	16.4
Most probable projection:	8.0	8.5	9.1	9.7	10.3	11.0	11.6	12.2	12.8	13.4
Lowest probable projection:	8.7	8.2	8.5	8.9	9.2	9.5	9.8	10.0	10.2	10.4

This can be done in various ways: build traditional schools, fill existing schools to capacity (i.e., redistribute attendance), convert existing traditional schools to YR calendars, etc. A coordinated combination of methods which absorbs the projected growth is called a plan (e.g., a plan might be to a) fill existing schools to capacity, then b) build traditional schools until 6,140 more pupils can be accommodated). We shall consider five methods as being potentially useful in Cherry Creek: a) redistribution of attendance (i.e., filling existing schools to capacity); b) construction of traditional schools; c) construction of YRS; d) conversion of traditional schools to YRS; e) double sessions. We shall not consider constructing of additions to existing buildings (because its costs would be nearly identical to constructing and operating new buildings), use of temporary buildings (since their use is a mere stop-gap in districts with great growth potential), or cross-age teaching (because any significant reduction in teaching staff would be successfully opposed by the teachers union).

The plans which will be considered are described in Figure 2. As an example of how Figure 2 is read, consider Plan 1. Plan 1 involves first redistributing attendance to absorb 930 pupils, then constructing traditional schools at a rate of one for each 570 pupils. (The numbers beside a plan in Figure 2 indicate the order in which methods would be employed.) Attention is directed to Plans 5-7 because they involve the construction of new buildings, an option to which the district is already committed by the 1975 bond election.

Comparative cost analysis of the plans is merely a calculation of the costs of accommodating an additional 6,140 elementary pupils (or 3,160 or 9,120 additional pupils, if one wishes to take the lowest and highest probable projections,

Cost in $ Millions	a. Attendance Redistribution (930 pupil limit)	b. Construct Traditional (570 pupils/ school)	c. Construct YRS (760 pupils/ school)	d. Convert Traditional to YRS (1,870 pupils limit)	e. Double Sessions (1,140 pupils/ school)
Plan 1: $13.7	1	2			
Plan 2: $11.4	1		2		
Plan 3: $7.6	1		3	2	
Plan 4: $0.2	1				2
*Plan 5: $16.5		1			
*Plan 6: $12.8			1		
*Plan 7: $9.2	3		1	2	
Plan 8: $16.5		1	(Abolish existing YRS)		

Figure 2. Description of Plans for Accommodating Enrollment Growth in Cherry Creek

Method of Absorbing

Enrollment Growth

respectively) by the methods indicated. The costs of the plans are indicated below.

Plan 1. Redistribution and Traditional Construction.

Total growth to be absorbed by 1984: 6,140 pupils.

Method	# Pupils Accommodated	Cost
1. Attendance Redistribution (via busing)	930	$0.2 million
2. Construct Traditional Schools	5,210	*9.14 x $1.5 million
TOTALS:	6,140	$13.7 million

Plan 2. Redistribution and YRS Construction.

Total growth to be absorbed by 1984: 6,140 pupils.

Method	# Pupils Accommodated	Cost
1. Attendance Redistribution (via busing)	930	$0.2 million
2. Construct YRS	5,210	6.86 x $1.5 million
TOTALS:	6,140	$11.4 million

In comparing Plans 1 and 2, it is apparent that filling existing schools to capacity then placing new schools to be built on YR calendars instead of traditional calendars results in a savings of $2 million over the next 10 years (9 new schools would be needed under Plan 1, and 7 would be needed under Plan 2).

*Number of school buildings needed is rounded to the nearest integer for subsequent calculations. Thus, capacity could be 285 pupils less than enrollment.

Plan 3. YRS Conversion and Construction.

Total growth to be absorbed by 1984: 6,140 pupils.

Method	# Pupils Accommodated	Cost
1. Attendance Redistribution (via busing)	930	$0.2 million
2. Convert Traditional to YRS	1,870	$1.0 million
3. Construct YRS	3,340	4.39 x $1.5 million
TOTALS:	6,140	$7.6 million

Plan 3 is a savings over 10 years of $6.1 million in comparison with Plan 1, and it is cheaper than Plan 2 by $3.8 million.

Plan 4. Double Sessions.

Total growth to be absorbed by 1984: 6,140 pupils.

Method	# Pupils Accommodated	Cost
1. Attendance Redistribution (via busing)	930	$0.2 million
2. Double Sessions	5,210	$0
TOTALS:	6,140	$0.2 million

Existing buildings in Cherry Creek could accommodate over 9,000 more pupils if converted to double sessions. Plan 4 is clearly the cost-cutting champion and we present it for your consideration without further comment.

Plan 5. Traditional School Construction.

Total growth to be absorbed by 1984: 6,140 pupils.

Method	# Pupils Accommodated	Cost
1. Construct Traditional Schools	6,140	10.77 x $1.5 million
TOTALS:	6,140	$16.5 million

A policy of adding schools on the traditional calendar at a rate of one school per 570 pupils would cost the district $16.5 million by 1984, $9 million more than Plan 3, YRS Conversion and Construction.

Plan 6. YRS Construction.

Total growth to be absorbed by 1984: 6,140 pupils.

Method	# Pupils Accommodated	Cost
1. Construct YRS	6,140	8.09 x $1.5 million
TOTALS:	6,140	$12.8 million

Placing all new schools on the YR calendar (Plan 6) saves $3.7 million over adding traditional schools (Plan 5).

Plan 7. Smorgasbord.

Total growth to be absorbed by 1984: 6,140 pupils.

Method	# Pupils Accommodated	Cost
1. Construct 5 YRS	3,800	5 x $1.6 million
2. Convert Traditional to YRS	1,870	$1.0 million
3. Attendance Redistribution (via busing)	470	$0.2 million
TOTALS:	6,140	$9.2 million

Plan 7 employs a variety of methods of absorbing enrollment growth; furthermore, it includes the construction of five new elementary schools as step #1, a step to which the district committed itself in the 1975 bond election. This plan was designed to see if all growth beyond that which

would be absorbed by three new schools could be accommodated at little additional cost. Indeed it can be, simply by converting existing traditional schools to YR and redistributing attendance slightly to fill all schools to capacity. Total cost: $9.2 million.

Plan 8. Abolition of YRS.

Total growth be absorbed by 1984: 6,140 pupils.

Method	# Pupils Accommodated	Cost
1. Abolish 3 existing YRS	-267	$0
2. Construct Traditional Schools	6,407	11.2 x $1.5 million
TOTALS:	6,140	$16.5 million

This plan is no more expensive than Plan 5; the district could abolish its present YRS program and absorb the excess pupils without the necessity of constructing an additional building above what would normally be required.

A literally gigantic number of other plans can be devised by combining and ordering the methods in Figure 2. Each plan can be "costed out" and compared with each other or those presented above. It might be instructive to assess the costs of a particular plan for the "highest probable" projection of enrollment, because the larger the growth, the greater the dollar difference between two plans. For example, consider Plans 5 and 6 in the event that enrollments grow to the "highest probable" level by 1984:

Total growth to be absorbed by 1984: 9,120 pupils.

	Method	# Pupils Accommodated	Cost
Plan 5:	Construct Traditional Schools	9,120	16 x $1.5 million = $24 million
Plan 6:	Construct YRS	9,120	12 x $1.5 million = $19.2 million

The savings of building YRS is $4.8 million if enrollments grow to the highest probable level by 1984.

It should be clear by now how the comparative cost analysis is conducted. It is simple arithmetic, but it yields illuminating results. Huge savings in capital construction can be realized simply by altering school organization. To acknolwege this fact and to glimpse however faintly the magnitude of the potential savings seem to us essential steps in arriving at a thoughtful decision about year-round schools.

V. SUMMARY OF FINDINGS

The findings of this evaluation in four general areas are summarized below.

Program Description:

1. The YRS concept requires flexible, individualized instructional programs to function properly. These conditions exist in the current YRS schools in District #5.
2. YRS makes special demands on teachers and parents, which those persons now involved with the program seem willing to meet.
3. Minor problems with YRS still must be resolved:
   a) Extended contracts for teachers;
   b) Insufficient planning time for teachers;
   c) Discontinuity of special and administrative services during staff vacations;
   d) Coordination with school and community extracurricular activities.
4. Teachers feel that YRS provides better learning opportunities for pupils.

Survey of Parents' Reactions:

A survey of parents of pupils in YRS revealed that:

1. Roughly one-third of the parents experienced conflicts between the YRS calendar and the children's summer sports activities;
2. More than one-third reported that the YRS calendar caused inconvenience with respect to family vacation plans; but more than one-half regarded YRS as more convenient than the traditional calendar for arranging family vacations;
3. Over 40 percent of parents anticipate future schedule inconveniences when their younger children are in YRS and older brothers and sisters are not;

4. Over one-third of the parents reported that children become restless or irritable during their winter vacations from YRS;
5. Three-fourths of the parents felt that their children maintained more momentum for learning and forget less during vacation under the YRS schedule;
6. Roughly two-thirds of the parents prefer the YRS to the traditional schedule.

Academic Achievement:

When pupils in YRS are matched on IQ and sex with pupils in traditional schools in District #5 and achievement test scores are compared, no important differences between YRS and traditional school pupils are observed at grades 3-6 in vocabulary, language skills, work study skills, or arithmetic. In short, no support was found for the contention that pupils' achievement is enhanced by YRS.

Costs:

1. YRS and traditional schools have essentially equal operating costs.
2. YRS is fundamentally a means of accommodating enrollment growth and thus must compete in any evaluation with such concepts as double sessions, constructing new buildings, enrollment redistribution, etc.
3. Converting traditional schools to YRS is cheaper than building new schools or adding to existing buildings. However, YRS is more expensive than double sessions and enrollment redistribution.
4. Elementary school enrollment in District #5 can be expected to grow by approximately 6500 pupils in the next 10 years. Various plans for accommodating this growth, using combinations of building new schools, redistributing enrollment, and converting traditional schools to YRS, have costs ranging from $7 million to $16 million.

APPENDIX A

ADDITIONAL INCONVENIENCES

Inconvenience caused by other children in family being on traditional schedule.

Prevents wife from working (e.g. teaching job).

Confusion etc. with different teachers tracking in and out; different teachers have different academic strengths; too many substitute teachers.

Interferes with summer jobs.

Friends, neighbors, and relatives are on different schedules.

Inavailability of babysitters.

Trouble with bus transportation and schedules.

Students who are off-track miss out on musical programs and activities.

Off-track students become bored when no activities are available.

Problems connected with make-up work necessary after being off-track.

Inconvenience caused by child changing from one track to another.

Parent would like to attend college but YRS conflicts with college schedule.

Lack of cohesiveness of school.

PTO, volunteer help difficult to organize.

Off-track students miss out on field trips.

The extended break during the winter months regular 3 weeks off-track and 2 weeks Christmas vacation.

Interference with swimming lessons at local pool.

When out of town guests visit during summer - Children couldn't stay up and visit them.

Parent teaches or works in a school with traditional schedule.

Problems connected with moving transferring to or from school on traditional schedule.

Additional Inconveniences (continued)

Three week units of study aren't enough to thoroughly explore interest or cover material.

Frequent half-day sessions.

Doctor and Dentist appointments interfere with YRS hours.

Just remembering and keeping track of so many vacations.

No buses available for after school activities.

Special problems encountered with medical treatment or testing, special education programs.

No spring vacation.

Getting kids to bed during daylight hours so they can get to school early.

APPENDIX B

ADDITIONAL CONVENIENCES

Vacation time available in seasons other than summer (less crowded vacation spots).

Gives special education child a chance to catch up (additional time, assistance).

Keeps class size proper, prevents overcrowded classes or double-scheduling.

Maximum use of physical facilities, resources; keeps taxes down, more efficient.

It's a good system. It works out better.

Children are happier in YRS than conventional, more e cited. Learning is fun.

Children don't get irritable and bored as they would in a long summer vacation. Several small vacations to look forward to.

Having two children in same family off at different times allows more time to be spent with each one.

Children don't get so tired of school.

Variety.

College schedule of parent's coincides with YRS.

Smaller work groups; more interaction with peers and teachers.

Less pressure to accomplish full year's academic work in 9 calendar months.

More learning, better learning environment; child's attention span is shorter; continual learning.

Helps in building cohesive family relationships.

Make-up work for time missed is more convenient in YRS.

Additional Conveniences (continued)

Extra curricular activities (scouts, etc.) have adjusted schedules to accommodate YRS.

My kids were off track on bad snowy days and didn't have to get to school.

School flexibility to switch tracks, accommodate to special problems.

Teachers are more enthusiastic.

Less discipline problems.

Intersession activities.

Instrumental music program can continue.

Easier for baby-sitting arrangements.

Doctor and dental appointment more convenient during off track

School activities are unique in summer:
canning, gardening, summer ecology